

## CLAIMS

1           1.       (currently amended) A predistorter arrangement for linearising a distorting element, the  
2 predistorter arrangement comprising:

3           ~~a predistorter means for processing~~ adapted to process an input signal which is required to be  
4 processed by the distorting element, to produce a predistorted input signal which is supplied to an input  
5 of the distorting element,

6           ~~a pilot means for generating~~ generator adapted to generate a pilot signal in the input signal, and  
7           ~~an error correction means for detecting~~ corrector adapted to detect the presence of distortion  
8 signals derived from cross-modulation of the input signal on the pilot signal in the distorting element  
9 output signal to produce an error correction signal for controlling the processing of said input signal in  
10 the predistorter ~~means~~.

1           2.       (original) A predistorter arrangement as claimed in claim 1, wherein the distorting  
2 element is an amplifier.

1           3.       (currently amended) A predistorter arrangement as claimed in claim 2, further  
2 comprising ~~means for removing~~ a pilot remover located downstream of the amplifier and adapted to  
3 remove the amplified pilot signal from the amplifier output signal prior to or following detection of the  
4 presence of distortion signals derived from the pilot signal in the amplifier output signal.

1           4.       (currently amended) A predistorter arrangement as claimed in claim 1, wherein the pilot  
2 ~~means~~ generator adds a pilot signal to the input signal.

1           5.       (previously presented) A predistorter arrangement as claimed in claim 1, wherein the  
2 pilot signal is a multiple tone signal.

1           6.       (original) A predistorter arrangement as claimed in claim 5, wherein the multiple tone  
2 pilot signal is a two-tone signal.

1           7.       (previously presented) A predistorter arrangement as claimed in claim 1, wherein the  
2 pilot signal is derived from the input signal.

1           8.       (original) A predistorter arrangement as claimed in claim 7, wherein the pilot signal is a  
2 frequency translated version of the input signal.

1           9.       (previously presented) A predistorter arrangement as claimed in claim 1, wherein the  
2 pilot signal is a single tone signal.

1           10.     (canceled)

1           11.     (currently amended) A predistorter arrangement as claimed in claim 1, wherein the error  
2 ~~correction means~~ corrector further detects the presence of distortion signals derived from intermodulation  
3 of the pilot signal to control the generation of the error correction signal.

1           12.     (previously presented) A predistorter arrangement as claimed in claim 1, wherein the  
2 frequency of the pilot signal is frequency hopped.

1           13.     (currently amended) A predistorter arrangement as claimed in claim 1, wherein the  
2 predistorter ~~means~~ comprises an input signal path for receiving an input signal which is required to be  
3 processed by the distorting element, and a distortion path in which an input signal from the input signal  
4 path is processed to generate a distortion signal, which is combined with the input signal in the input  
5 signal path to produce the predistorted input signal.

1           14.     (currently amended) A predistorter arrangement as claimed in claim 13, wherein the  
2 ~~correction means~~ error corrector correlates the distorting element output signal with the distortion signal  
3 to produce an error correction signal.

1           15.     (currently amended) A predistorter arrangement as claimed in claim ~~[[13]]~~ 14, wherein  
2 the distortion path includes ~~means for adjusting an adjuster adapted to adjust~~ the distortion signal in  
3 phase and amplitude in dependence on the error correction signal.

1           16.     (currently amended) A predistorter arrangement as claimed in claim 15, wherein the  
2 ~~adjustment means~~ adjuster comprises a variable phase shifter and a variable attenuator.

1           17.     (currently amended) A predistorter arrangement as claimed in claim 15, wherein the  
2 ~~adjustment means~~ adjuster comprises an in-phase ~~adjustment means~~ adjuster and a quadrature phase  
3 ~~adjustment means~~ adjuster.

1           18.     (currently amended) A predistorter arrangement as claimed in ~~any of the preceding~~  
2 ~~claims claim 1~~ comprising:

3           first and second predistorters ~~means~~, the first predistorter ~~means~~ processing the input signal to  
4 produce a first predistorted input signal which is supplied as an input to the second predistorter ~~means~~,  
5 and the second predistorter ~~means~~ processing the first predistorted input signal to produce the  
6 predistorted input signal supplied to the distorting element;

7           first and second pilot generators, the first pilot ~~means for generator~~ generating a first pilot signal  
8 in the input signal, ~~and the second pilot means for generator~~ generating a second pilot signal in the first  
9 predistorted input signal; and

10          first and second error correctors, the first error ~~correction means for corrector~~ detecting the  
11 presence of distortion signals derived from the first pilot signal in the distorting element output signal to  
12 produce a first error correction signal for controlling the processing of said input signal in the first  
13 predistorter ~~means~~, and ~~the second error correction means for corrector~~ detecting the presence of  
14 distortion signals derived from the second pilot signal in the distorting element output signal to produce a  
15 second error connection signal for controlling the processing of said first predistorted input signal in the  
16 second predistorter ~~means~~.

1           19.     (currently amended) A predistorter arrangement as claimed in claim 18, in which the  
2 first and second predistorters ~~means~~ are adapted so that only one of them cancels higher order distortion.

1           20.     (currently amended) A predistorter arrangement as claimed in claim 18, in which the  
2 first and second ~~pilot signals error correctors~~ share one or more components in common ~~which are~~  
3 ~~derived from a common source~~.

1           21.     (currently amended) A method for linearising a distorting element, including a  
2 predistorter step in which an input signal which is required to be processed by the distorting element is  
3 processed to produce a predistorted input signal which is supplied to an input of the distorting element, a  
4 pilot generation step in which a pilot signal is generated in the input signal, and an error correction step  
5 in which the presence of distortion signals derived from cross-modulation of the input signal on the pilot  
6 signal in the distorting element output signal is detected to produce an error correction signal which  
7 controls the step of processing the input signal.

1           22.     (original) A method as claimed in claim 21, including first and second predistorter steps,  
2 the first step being to process the input signal in a first predistorter to produce a first predistorted input

3 signal which is supplied to the input of a second predistorter in which the second step is carried out by  
4 processing the first predistorted input signal to produce the input to the distorting element; first and  
5 second pilot generation steps in which first and second pilot signal, respectively, are generated in the first  
6 and second predistorters, respectively; and a first and second error correction steps in which the presence  
7 of distortion signals derived from the respective pilot signals in the distorting element output signal are  
8 detected to produce respective error correction signals which control the processing of signals in the  
9 respective first and second predistorter steps.

1 23. (original) A method as claimed in claim 22, in which one of the predistorters is inhibited  
2 from error correction while the other carries out correction to produce a steady state, and is then enabled  
3 to carry out correction.

1 24. (currently amended) A control circuit for controlling a predistorter section of a  
2 predistorter amplifier, the circuit having a pilot generator ~~means for coupling~~ adapted to couple to an  
3 input of the predistorter section to add a pilot signal to signals input to the predistorter amplifier, and an  
4 ~~error correction means for coupling~~ corrector adapted to couple to an output of the amplifier to sample  
5 signals output from the amplifier and to detect the presence of distortion signals derived from cross-  
6 modulation of the input signal on the added pilot signal, and for coupling to adjustment circuitry in the  
7 predistorter section to adjust the predistorter section in dependence on the detected distortion signals.

1 25-28. (canceled)